CONSTRUCTION SCHEDULE OF ACTIVITIES

GENERAL NOTES:

1. Plant staff to waste sludge off SBR #1 and #2 prior to draining the Digester and start draining the digester on 12/5/14 to minimize pump time on 12/8/14.

2. Plant staff to notify Staab when to temporarily waste sludge off SBR #1 & #2 to EQ Basin #1.

3. Final termination of new DO and Level Instruments must be coordinated with plant staff to maintain plant operations. It is anticipated to happen on the "Start-Up Service Days" with ICS.

12/8/14 – (DIGESTER OUT OF SERVICE)

1. Drain Digester utilizing plant pumps to their capabilities. Pump remaining liquid in tank to the lagoons with pumps as required to perform the work associated with the decant equipment installation, instrument installation, air pipe repairs, and digester preventative maintenance. Set up temporary pump to pump solids from SBR#1 and #2 to EQ Basin #1.

2. Start/Complete installation of Level Transducer in EQ Basin #1 in preparation of temporarily wasting from SBR #1 & #2 over the duration of the Digester being out of Service.

12/9/14

1. Install Floating Decant Equipment, DO Sensor, and Level Transducer in the Digester tank. Staab will temporarily waste sludge from SBR #1 & #2 as directed by plant staff.

12/10/14

1. Continue & complete installation of Floating Decant Equipment, DO Sensor, and level Transducer in Digester tank. Staab will temporarily waste sludge from SBR #1 &#2 as directed by plant staff.

2. Start/Complete Motive Pump preventative maintenance. (**Attachment A**). Configure valves for Motive Pump #1 & #2 to pump from and back into EQ Basin #1 to perform motive pump preventative maintenance.

12/11/14

1. Start & complete repair of air header pipe in Digester.

2. Complete Preventative Maintenance on EQ Basin Blower #1 & #2 (**Attachment B**)

3. Staab will temporarily waste sludge from SBR #1 & #2 as directed by plant staff.

4. Electrical construction as schedule allows.

12/12/14

1. Staab offsite. Pieper Electric to work onsite as schedule allows.

12/15/14

1. Staab will temporarily waste sludge from SBR #1 & #2 as directed by plant staff.

2. Evoqua (Floating Decant & Digester Equipment Representatives) travels today and assesses the site conditions.

3. Electrical work activities: Load Profile Blowers & Motive Pumps, Adjust Valve Limit Switches, Measure and Record voltage & amperage on each leg of the (2) EQ Blowers, and install DO Sensors and Level Transducers as schedule allows.

12/16/14 – (DIGESTER GOES BACK INTO SERVICE)

1. Electrical work activities continue as needed: Load Profile Blowers & Motive Pumps, Adjust Valve Limit Switches, Measure and Record voltage & amperage on each leg of the (2) EQ Blowers, and install DO Sensors and Level Transducers as schedule allows.

2. Staab and Evoqua will complete the Digester Preventative Maintenance. (**Attachment C**)

3. Temporary pumping from SBR #1 & #2 is not needed after today.

12/17/14

1. Complete any remaining work items as needed.

2. Staab & Pieper Electric Start-Up Services for plant modifications (following control system upgrades)

12/18/14

1. Complete any remaining work items as needed.

2. Staab & Pieper Electric Start-Up Services for plant modifications (following control system upgrades)

ATTACHMENT "A"

Motive Pumps

Inspector Name: _____

Maintenance and Inspection Checklist

Company: _____

Bad River - New Odanah Wastewater Treatment Facility
IHS Project BE-12-G85

Date Inspected: _____

Item	Description	Initial When Compl.	Comments and Recommendations
1	General Information: Record name plate information including model, serial number, voltage, rated HP, FLA, etc.		
2	Electrical Checks: Measure and record voltage and amperage on each leg under load.		
3	Safety Checks: Verify all safety guards are in place with requried labels.		
4	Check pump alignment: Visually check alignment of motor, shaft and pump. Note if any excessive vibration and noise.		
5	Pump seal box: Inspect for leakage/damage. Verify proper operation of seal lubrication system.		
6	Pump and motor bearings: Lubricate bearings and check that bearing operating temperature is not excessive.		
7	Gearbox: Drain, flush and replace oil.		
8	Process piping: Inspect suction and discharge piping, flanges and gaskets for signs of damage.		
9	Anchors: Visually check anchor bolts and supports for signs of damage.		
Other comments or observations:			

ATTACHMENT "B"

EQ Basin Blowers

Inspector Name: _____

Maintenance and Inspection Checklist

Company: _____

Bad River - New Odanah Wastewater Treatment Facility
IHS Project BE-12-G85

Date Inspected: _____

Item	Description	Initial When Compl.	Comments and Recommendations
1	General Information: Record name plate information including model, serial number, voltage, rated HP, FLA, etc.		
2	Electrical Checks: Measure and record voltage and amperage on each leg under load.		
3	Safety Checks: Verify all safety guards are in place with requried labels.		
4	Inlet Air Filters: Replace inlet air filters.		
5	Bearings: Grease drive end bearings.		
6	Gearbox: Drain, flush and replace oil.		
7	Belts: Replace belts.		
8	Operational Check: Observe unit while operating and note any issues or concerns.		
Other comments or observations:			

ATTACHMENT "C"

Aerobic Digester

Inspector Name: _____

Maintenance and Inspection Checklist

Company: _____

Bad River - New Odanah Wastewater Treatment Facility
IHS Project BE-12-G85

Date Inspected: _____

Item	Description	Initial When Compl.	Comments and Recommendations
1	Basin - Drain basin and clear of debris as necessary to facilitate maintenance and inspection.		
2	Basin Structure - Inspect the basin interior for damage including signs of concrete cracking, failure or leaking.		
3	Coarse bubble aeration system - Observe the system during normal operation to check for consistency of aeration throughout the basin and determine possible problem areas.		
4	Coarse bubble aeration system - Inspect air distribution piping for leaks or other damage. Inspect pipe supports and anchor bolts for damage and proper torque.		
5	Coarse bubble aeration system - Inspect bulkhead seal where air distribution piping penetrates the digester wall.		
6	Coarse bubble aeration system - Remove diaphragms from snap cap aeration diffusers. Clean the snap cap support base and inspect for plugging or other damage. (see appendix A for diagram of snap cap diffuser)		
7	Coarse bubble aeration system - Clear blockage from diffusers if present.		
8	Coarse bubble aeration system - Note any diffusers that are damaged or not working properly including their specific locations.		
9	Sludge Removal Piping - Inspect piping and wall penetration for damage.		
10	Decanter - Inspect decanter seat for damage		
11	Decanter - Inspect bulkhead seal where decanter piping penetrates the digester wall.		
12	Level Transducer - Inspect submersible level transducer piping and anchors for damage.		
13	DO Sensor - Inspect dissolved oxygen sensor piping and anchors for damage.		
14	Take pictures of the following items: - Basin being aerated prior to draining basin for maintenance (to show bubble pattern on surface). - Basin being aerated after completion of maintenance (to show bubble pattern after diffusers have been cleaned). - Air distribution piping and wall penetration - Sludge removal piping and wall penetration - Snap cap diffusers (representative pictures, not all diffusers) - Level transducer and DO sensor piping - Decanter seat and wall penetration		

Note that pressure test on air piping between blower and digester basin is to be recorded seperately.

Other comments or observations: